

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the following remarks. Claims 1-13 remain pending in the present application, of which, Claim 1 is independent.

Claim Rejection Under 35 U.S.C. §102

The test for determining if a reference anticipates a claim, for purposes of a rejection under 35 U.S.C. § 102, is whether the reference discloses all the elements of the claimed combination, or the mechanical equivalents thereof functioning in substantially the same way to produce substantially the same results. As noted by the Court of Appeals for the Federal Circuit in *Lindemann Maschinenfabrick GmbH v. American Hoist and Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984), in evaluating the sufficiency of an anticipation rejection under 35 U.S.C. § 102, the Court stated:

Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim.

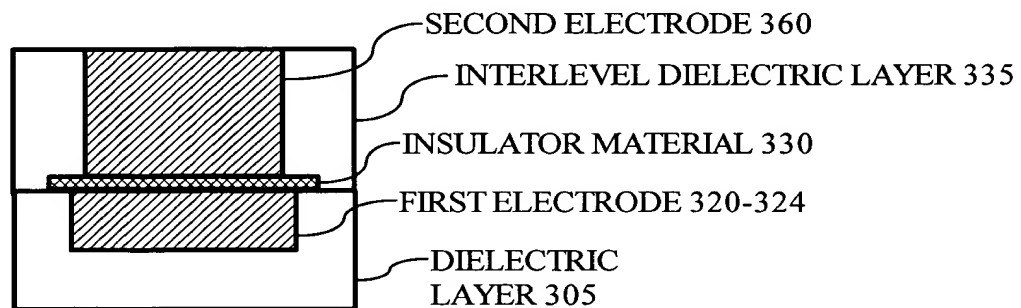
Therefore, if the cited reference does not disclose each and every element of the claimed invention, then the cited reference fails to anticipate the claimed invention and, thus, the claimed invention is distinguishable over the cited reference.

The Office Action sets forth a rejection of Claims 1-4 and 7-12 under 35 U.S.C. § 102(e) as allegedly being anticipated by the disclosure contained in U.S. Patent No. 6,051,858 to Uchida et al. This rejection is respectfully traversed because Uchida does not disclose each and every element claimed in independent Claim 1 of the present invention. Uchida et al. therefore cannot anticipate independent Claim 1 and the claims that depend therefrom.

As an initial matter, the heading section of this rejection only indicates that Claims 1-4 and 7-12 are rejected, whereas the body of this section states that Claim 13 is also rejected. The Examiner is respectfully requested to correct this oversight.

Claim 1 relates to a method of forming a by-pass capacitor on a multi-level metallization device. In the method, a first electrode is formed in a first dielectric layer of the multi-level metallization device. A substantially thin insulator layer is deposited over the first dielectric layer of the multi-level metallization device. In addition, a second electrode is formed in a second dielectric layer over the substantially thin insulator layer.

The following diagram may represent the by-pass capacitor formed through implementation of the method set forth in Claim 1. It is to be understood, that the following figure is merely a representation of a possible capacitor configuration based upon the steps set forth in Claim 1. Therefore, the figure below is not intended to limit the invention in any respect but is provided to assist in illustrating the differences between the present invention and the disclosure contained in Uchida et al.



As can be seen in the above figure, the first electrode 320-324 is formed in the dielectric layer 305 and the second electrode 360 is formed in the interlevel dielectric layer 335. An insulator material 330 is positioned between the first electrode 320-324 and the second electrode 360.

In contrast, Uchida et al. discloses a ferroelectric integrated circuit which differs from the elements set forth in Claim 1 of the present invention. The Official Action states that Uchida et al. teaches a method comprising “forming a first electrode (32) in a first dielectric layer (31) of the multi-level metallization device (Fig. 5).” However, Uchida et al. fails to disclose forming a first electrode **in** a first dielectric layer, as recited in Claim 1. Specifically, as seen in Figure 5, Uchida et al. discloses that the bottom electrode (32) is formed **over** the interlayer dielectric (31).

The Official Action also states that Uchida et al. teaches “forming a second electrode (55) in a second dielectric layer (40), wherein the second dielectric layer (40) is formed substantially over the substantially thin dielectric layer (34) (Fig. 5).” However, Uchida et al. discloses that layer 40 is a protective layer comprising a compound of one or more metals with oxygen and/or nitrogen, and not that layer 40 is a second dielectric layer (see Column 9, lines 29-44). Therefore, the integrated circuit of Uchida et al. is formed through a process that differs substantially from the elements set forth in Claim 1 of the present invention. As such, Uchida et al. fails to disclose each and every element of the claimed invention as set forth in Claim 1 and Uchida et al. thus fails to anticipate Claim 1.

Accordingly, Claim 1 is distinguishable and allowable over the disclosure contained in Uchida et al. Claims 2-13 are also allowable over Uchida et al. at least by virtue of their dependencies upon allowable Claim 1. Claims 2-13 are also allowable over Uchida et al. because these claims contain features that are not disclosed in Uchida et al.

For instance, the Official Action incorrectly asserts that column 8, lines 45-50 disclose the features of Claim 2 of the present invention. In fact, this cited section of Uchida et al. discusses a situation where a sequence of patterning steps may be omitted. Thus, this cited section does not disclose that the substantially thin insulator layer is patterned to

substantially cover the first electrode and that a thickness of the substantially thin insulator layer is adjusted, as claimed in Claim 2 of the present invention.

Claim Rejection Under 35 U.S.C. §103

The test for determining if a claim is rendered obvious by one or more references for purposes of a rejection under 35 U.S.C. § 103 is set forth in MPEP § 706.02(j):

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Therefore, if the above-identified criteria are not met, then the cited reference(s) fails to render obvious the claimed invention and, thus, the claimed invention is distinguishable over the cited reference(s).

The Office Action sets forth a rejection of Claims 5 and 6 under 35 U.S.C. § 103(a) as allegedly being unpatentable over the disclosure contained in Uchida et al. This rejection is respectfully traversed because Uchida et al. fails to disclose the invention as set forth in independent Claim 1 of the present invention, upon which Claims 5 and 6 depend.

Initially, it is respectfully submitted that the heading section of this rejection incorrectly identifies the Uchida et al. document as having the reference numeral ('680). Assuming that this rejection refers to the same Uchida et al. document relied upon in the rejection of independent Claim 1, the reference numeral should be written as ('858). The Examiner is respectfully requested to correct this oversight.

The Official Action correctly notes that Uchida et al. fails to explicitly teach the thickness of the thin insulator layer as claimed in Claim 5 of the present invention. However, the Official Action incorrectly concludes that the passage recited in lines 45-50 of column 14 discloses that the dielectric layer 34 is thin. Instead, this cited passage discusses that an active layer 106 is a thin film and therefore does not appear to pertain to the dielectric layer 34 cited above. Thus, the reliance on this cited passage to somehow conclude that a prima facie case of obviousness has been achieved is improper.

The Official Action also correctly notes that Uchida et al. fails to disclose that the dielectric constant of the substantially thin insulator layer is between 4 and 100. However, the Official Action incorrectly concludes that Claim 6 is prima facie obvious because there does not appear to be any indication in Uchida et al. that suggests the dielectric constant of the substantially thin insulator layer is between 4 and 100.

Even assuming for the sake of argument that the bases for concluding that Claims 5 and 6 are somehow rendered obvious by the disclosure contained in Uchida et al. is proper, the proposed justifications do not purport to render independent Claim 1 unpatentable over Uchida et al. In fact, Uchida et al. still fails to disclose all of the features of allowable Claim 1 upon which Claims 5 and 6 depend. Accordingly, Claims 5 and 6 are allowable over Uchida et al. at least by virtue of their dependencies upon allowable Claim 1. The Examiner is, therefore, respectfully requested to withdraw the rejections of Claims 5 and 6 and to allow these claims.

Conclusion

In light of the foregoing, withdrawal of the rejections of record and allowance of this application are earnestly solicited.

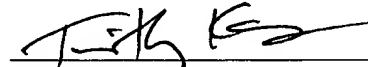
Should the Examiner believe that a telephone conference with the undersigned would assist in resolving any issues pertaining to the allowability of the above-identified application, please contact the undersigned at the telephone number listed below. Please grant any required extensions of time and charge any fees due in connection with this request to deposit account no. 08-2025.

Respectfully submitted,

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By



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